

Title: Morphology and cytochemical diagnosis of hairy cells leukemia (Bachelor thesis)

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Abstract

Hairy cell leukemia is the chronic lymphoproliferative disorder of clonal character arising from mature B cells. In the peripheral blood smear and in the bone marrow smear, we find the typical leukemic cells which are characteristic by their size, morphology of cell nucleus and cytoplasm. They are bigger than healthy lymphocytes, and they have most frequently the kidney shaped nucleus with fine net-like chromatin and the cytoplasm projecting into fine salients all over the cell perimeter. In the blood count we usually find a mild pancytopenia. To demonstrate the presence of the pathological cells in the peripheral blood smear and the bone marrow smear, we use the panoptic staining method according to Pappenheim. Among other examinations contributing to the diagnostics of this disease belong cytochemical examination of acid phosphatase and acid phosphatase resistant for tartarate, immunophenotypic findings and trepan bone marrow biopsy. In addition to the typical form of hairy cell leukemia we distinguish another variant form of hairy cell leukemia which differs from the typical form by the presence of leukocytosis with lymphocytosis and by the morphology of pathological lymphocytes. Also some other lymphoproliferative disorders can have similar values during some examinations and therefore they can be interchangeable with hairy cell leukemia. Hence, it is necessary to have as much information and examination options as possible during the determination of the correct diagnosis.